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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,097	12/12/2001	Saied Ghamaty		8977

7590

10/22/2003

Ross Patent Law Office  
P.O. Box 2138  
Del Mar, CA 92014

EXAMINER

SOWARD, IDA M

ART UNIT PAPER NUMBER

2822

DATE MAILED: 10/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/021,097

Applicant(s)

GHAMATY ET AL.

Examiner

Ida M Soward

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

This Office Action is in response to the Applicants' remarks filed July 12, 2003.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10-11 contain the trademark/trade name Kapton®. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe a polyimide substrate and, accordingly, the identification/description is indefinite.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elsner et al. (5,436,467) in view of Hilton et al. (EP 553,982 A1) and Ghamaty et al. (6,096,965).

Elsner et al. teach a thermoelectric module comprised of: a plurality of n-legs 10; very thin alternating layers of two different alloys of boron carbide; a silicon substrate; a plurality of p-legs 12; and the p-legs and n-legs being electrically connected to produce the thermoelectric module. However, Elsner et al. fail to teach alternating layers of silicon and silicon carbide; a Kapton® polyimide substrate, at least 100 very thin alternating layer thickness and the number of alternating layers. Hilton et al. teaches alternating layers of silicon and silicon carbide (abstract). Ghamaty et al. teach Kapton® polyimide substrate/film (col. 5, lines 39-49), at least 100 very thin alternating layers that are each about 10 nm thick which is less than 100 nm (col. 2, lines 11-21) and a plurality of very thin alternating layers of about 3,000 layers which is in the range of at least 1250 layers (col. 2, lines 11-21). Since Elsner et al., Hilton et al. and Ghamaty et al. are from the same field of endeavor (semiconductor devices), the purpose disclosed by Ghamaty et al. would have been recognized in the pertinent art of Elsner et al. and Hilton et al. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the thermoelectric module of Elsner et al. and the alternating layers of silicon and silicon carbide of Hilton et al. by incorporating the substrate, alternating layer thickness and the number of

alternating layers of Ghamaty et al. to reduce the lattice thermal conductivity without adversely affecting the electric conductivity (col. 1, lines 37-41).

### ***Response to Arguments***

Applicant's arguments filed 07-12-03 have been fully considered but they are not persuasive.

Since Elsner et al., Hilton et al. and Ghamaty et al. are from the same field of endeavor (semiconductor devices), the purpose disclosed by Ghamaty et al. would have been recognized in the pertinent art of Elsner et al. and Hilton et al. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to do so is found in Ghamaty et al. (col. 1, lines 37-41). In response to applicant's argument that Hilton et al. is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Hilton et al. disclose a semiconductor

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device having alternating Si and SiC layers. Additional in response to the remarks, claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263, F.2d 844 847, 120 USPQ 528, 531 (CCPA 1959).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respects to thermoelectric modules:

Otey (US 6,410,971 B1)

Span (US 2003/00424497 A1)

Tsuzaki et al. (US 6,391,676 B1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ida M Soward whose telephone number is 703-305-3308. The examiner can normally be reached on Monday - Thursday, 6:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on 703-308-4905. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

ims  
October 15, 2003



AMIR ZARABIAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800